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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,644	02/12/2004	Hendrik Antony Johannes Neerhof	081468-0307829	1756
909	7590	09/13/2005	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			NGUYEN, HUNG	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	

2851

DATE MAILED: 09/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/776,644

Applicant(s)

NEERHOF, HENDRIK ANTONY  
JOHANNES

Examiner

Hung Henry V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/12/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-4, 9-12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sakai et al (U.S.Pat. 4,737,824).

With respect to claims 1 and 12, Sakai et al disclose a lithographic apparatus (see col.2, lines 60-61) comprising substantially all of the structures set forth in the instant claim such as: at least one support structure (2) adapted to claim a object (1) thereon and the object clamped on the support structure defining a compartment (2b) and a fluid supply structure (7-9) in communication with the compartment, the fluid supply structure being constructed and arranged to supply a fluid to the compartment, wherein the fluid supply structure includes a meter (5) arranged to measure a change in at least one of flow velocity of the fluid and pressure of the fluid as a function of time, in order to detect whether or not the object is correctly clamped on the support structure.

As to claim 3, Sakai teaches the meter/sensor (5) is a pressure sensor (see col.3, line 35) connected to a control unit (12) arranged to receive a value representative of the pressure of the fluid and arranged to determine a change in the pressure of the fluid as a function of time and to

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compare the change with a predetermined value of the change (see col.2, lines 34 thru col.4, line 65).

As to claim 4, Sakai does not expressly disclose a first support structure for supporting a patterning device, a radiation system and a projection system, as claimed. However, these elements are inherent elements of an exposure apparatus and must be present for the exposure apparatus to function as intended.

As to claims 9-11, the claimed method, the claimed computer system and the claimed computer-readable medium are seen to be inherent teachings in existence of the above described apparatus.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable Sakai et al (U.S.Pat. 4,737,824).

With respect to claims 6-8, Sakai et al discloses a lithographic apparatus comprising substantially all of the limitations of the instant claims as discussed. Sakai et al does not expressly disclose the pressure in the compartment being specifically changed to specified levels during a predetermined period of time, or to specific ranges, as recited in the instant claims.

However, Sakai et al suggests that "the computing circuit12 compares the output of the flatness

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detecting device 10 with the output of the command circuit 6 and computes the difference therebetween. The drive unit 7 controls, in accordance with the output of the computing circuit 12, the supply of vacuum to the pocket 2b from the tube 8 or the supply of air pressure to the pocket 2b from the tube 8 or the supply of air pressure to the pocket 2b from the tube 9, to thereby change (increase or decrease), the pressure within the pocket 2b" (see col.4, lines 16). In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to change the pressure level in the compartment/pocket (2b) of Sakai to specified ranges or levels, as recited in the instant claims so that the wafer is held correctly on the wafer chuck and the deteriorations of the image transfer onto the wafer can be prevented.

5. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al (U.S.Pat. 4,737,824) in view of Amano (U.S.Pat. 6,401,359).

As to claim 2, Sakai teaches a lithographic apparatus comprising substantially all of the structures set forth in the instant claim except for a flow meter. Amano teaches a system for supporting and clamping a wafer and having a flow meter (54) for detecting the a change in the flow velocity of the helium gas supplied to a compartment between the wafer and a mounting stand supporting the wafer. In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Sakai et al and Amano to obtain the invention as specified in claim 2. It would have been obvious to a skilled artisan to employ the flow meter as taught by Amano into the device of Sakai for the

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purpose of detecting the flow velocity of the fluid in the compartment of Sakai, thereby clamping of the wafer can be accurately determined and corrected.

With respect to claim 5, Sakai as modified by Amano lacks to show that the fluid is a gas comprising argon. However, a use of inert gas such as argon, nitrogen, helium in a lithographic apparatus is well known per se. It would have been obvious to a skilled artisan to supply argon to the compartment of Sakai for at least the purpose of increasing of the light transmittance or the generation of ozone in the exposure apparatus.

***Prior Art Made of Record***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

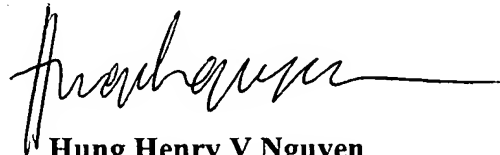
Takahashi (U.S.Pat. 6,135,858) and Brcka et al (U.S.Pat. 6,853,953) teach substrate holding devices and have been cited for technical background.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V. Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Hung Henry V Nguyen', with a long horizontal flourish extending to the right.

**Hung Henry V Nguyen**  
**Primary Examiner**  
**Art Unit 2851**

hvn  
9/9/05